

F-7251

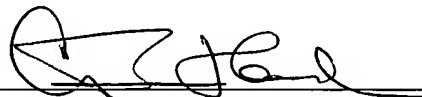
REMARKS

This Preliminary Amendment, which does not introduce new matter, amends the specification and claims consistently with the substance of an Article 34 Amendment filed in the International Stage, except with substantial adaptations being made for U.S. practice, corrects obvious errors and provides an Abstract more suitable for U.S. practice. The revised discussion of prior art included in the Article 34 Amendment is not included in this Preliminary Amendment as that might be considered new matter under U.S. practice.

Respectfully submitted,

Jordan and Hamburg LLP

By



C. Bruce Hamburg

Reg. No. 22,389

Attorney for Applicants

122 East 42nd Street
New York, New York 10168
(212) 986-2340

F-7251

APPENDIX I

AMENDED CLAIMS WITH AMENDMENTS INDICATED THEREIN BY BRACKETS AND UNDERLINING

1. (Amended) Method for mechanical joining of stacked plate-shaped [joining partners, particularly of sheets (4, 5) by means of] objects comprising punch riveting with semitubular rivet using tools situated above and [beneath of] below the [joining partners,] objects whereby the semitubular rivet penetrates linearly into the [joining partners characterized in that] objects, wherein during [the] axial feeding movement of the semitubular rivet the upper tool [(7) or/and] and/or a portion [(8)] of the lower tool are given a wobbling additional movement in radial and/or tangential direction.

2 (Amended) Method [to] of Claim 1 [characterized in that a semitubular rivet with material accumulations in critical areas (6a to 6e) is used] wherein the rivet has a head having a convex elevation and a shank having an inner contour and an outer contour which are shaped with a continuous increase of the cross-sectional area of the shank from a foot of the rivet to a head of the rivet.

3. (Amended) Method [to] of Claim 1 or 2 [characterized in that during the] , wherein the wobbling additional movement comprises synchronized,

F-7251

simultaneous wobbling additional movement of the upper tool [(7)] and a portion [(8)] of the lower tool [these carry out a synchronized movement].

4. (Amended) Method [to] of Claim 1 [to 3 characterized in that] or 2, wherein the wobbling additional movement is carried out with a wobbling angle [(10) between] of from 1° [and] to 10°.

5. (Amended) [Device for carrying out the method to any of the Claims 1 to 4, which consists of] Apparatus for mechanical joining of stacked plate-shaped objects by punch riveting with semitubular rivet whereby the semitubular rivet penetrates linearly into the object, comprising an upper tool [(7)], a lower tool [(8, 9)], a die [(9)] fixed in axial direction and a feeding device for the [auxiliary joining part characterized in that] rivet, wherein the upper tool [(7) or/and] and/or a portion [(8)] of the lower tool [is/are] is supported [such that they can be given] to permit a wobbling movement in radial and/or tangential directions to be imparted thereto.

6. (Amended) [Device to] Apparatus of Claim 5 [characterized in that] , wherein the die [(9)] is a split die.

F-7251

7. (Amended) [Device to] Apparatus of Claim 5 [characterized in that for a not wobbling portion (8) of the lower tool the single parts (8, 9) are constructed as one part] , wherein no portion of the lower tool is supported to permit wobbling motion to be imparted thereto and a portion of the lower tool and the die are integral.

8. (Amended) [Auxiliary joining part] Semitubular rivet for [carrying out the process to any of the Claims 1 to 4 designed as a semitubular rivet characterized in that the semitubular rivet has material accumulations in critical areas (6a to 6e)] for use in a method for mechanical joining of stacked plate-shaped objects by punch riveting with the rivet using tools situated above and below the objects whereby the rivet penetrates linearly into the objects and wherein during axial feeding movement of the rivet the upper tool and/or a portion of the lower tool are given a wobbling additional movement in radial and/or tangential direction, the rivet comprising a head having a convex elevation and a shank having an inner contour and an outer contour which are shaped with a continuous increase of the cross-sectional area of the shank from a foot of the rivet to a head of the rivet.

10. (Amended) [Auxiliar joining part to] Semitubular rivet of Claim 8 [or 9 characterized in that] , wherein the inner contour [(6d, 6e)] and the outer contour [(6b, 6c) of the semitubular rivet is described by] each comprise a tractrix [curves in each case, whereby] curve and wherein the starting points of the curves are

F-7251

located in direction of the rivet foot and the transfer of the curves in the [centre]
center is shaped tangentially.

F-7251

APPENDIX II**AMENDED SPECIFICATION PARAGRAPHS WITH AMENDMENTS
INDICATED THEREIN BY BRACKETS AND UNDERLINING**

Page 1: 1st full paragraph, replace with the following:

The invention relates to a method, a device and an auxiliary joining part for mechanical joining by means of punch riveting [according to the generic terms of Claims 1, 5 and 8].

Page 1: 6th full paragraph, replace with the following:

For the C-frames preferably used as tool frames, heavy forces limit the [daylight] capacity and hence, the applicability of the method.

Page 1: 9th full paragraph, replace with the following:

According to the invention, the problem is solved by a method [with the features mentioned in Claim 1] in which, during the axial feeding motion of the semitubular

F-7251

rivet, the upper tool or/and a portion of the lower tool are given a wobbling additional movement in radial and/or tangential direction.

Page 2: 2nd full paragraph, replace with the following:

Advantageously, for punch riveting with semitubular rivet [rivets are] a rivet is used [with material accumulated in critical areas] the head of which has a convex elevation and the shank inner and outer contours of which beginning from the rivet foot in direction to the rivet head are shaped such that a continuous increase of the cross-sectional area of the rivet shank occurs.

Page 2: 4th full paragraph, replace with the following:

According to the invention, the problem is further solved by a device [in connection with the features mentioned in the generic term of Claim 5 whereby] by means of which the upper tool or/and a portion of the lower tool as counterpunch can be moved in a wobbling manner in radial and/or tangential directions.

Page 2: 8th full paragraph, replace with the following:

F-7251

According to the invention, the problem is further solved by an auxiliary joining part [in connection with the features mentioned in the generic term of Claim 8] whereby the [semitubular rivet is provided with material accumulations in critical areas] shank inner and outer contours, beginning from the rivet foot in direction of the rivet head, are shaped such that a continuous increase of the cross-sectional area of the rivet shank results.

Page 3: 1st full paragraph, delete the following:

[Advantageously, the rivet has a convex elevation at the rivet head.]